CHROMACOLOUR
INTERNATIONAL
LIMITED

TAKE_2

ANIMATION LINE TEST PROGRAM

INSTRUCTION MANUAL

Chapter 1: Tutorials

This chapter takes you through some of Take_2's most important features and concepts. When you have finished these tutorials you should be able to use Take_2 quite well.

Hardware setup

Before you begin, you should make sure that the digitiser hardware and the videocamera are connected correctly. Consult the digitiser manual on this topic.

Syntax

Items that are displayed on screen are printed in **BOLD CAPITALS**, while [brackets] indicate what should be used throughout the guided tour. For iconographic buttons, a description of the function is given instead.

Conventions

Clicking:
Pressing and releasing the left mouse-button over an object

Double-clicking:
Clicking twice rapidly over an object.

Dragging:
Pressing the left mouse-button over an object and moving the mouse while holding the button down.

Choosing:
Selecting a menuitem using the right mouse-button.

A basic line-test session

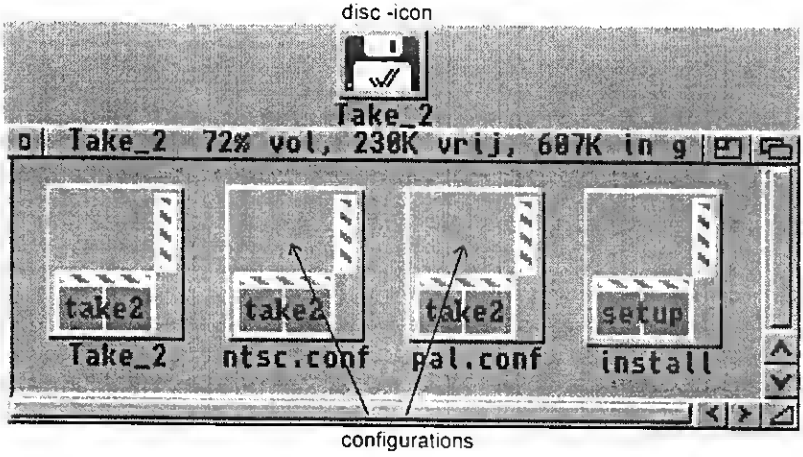
Preparing the tutorial

Something to work with:-

Before we start, we need an animation to test. A short simple animation (pencil on paper), such as a walking cycle, will do fine. If you don't have this at hand, any object animated under the camera will do as well. If there is a reference to drawings in the tutorial, you should substitute this for a stage in your 'live' animation.

Starting up Take_2

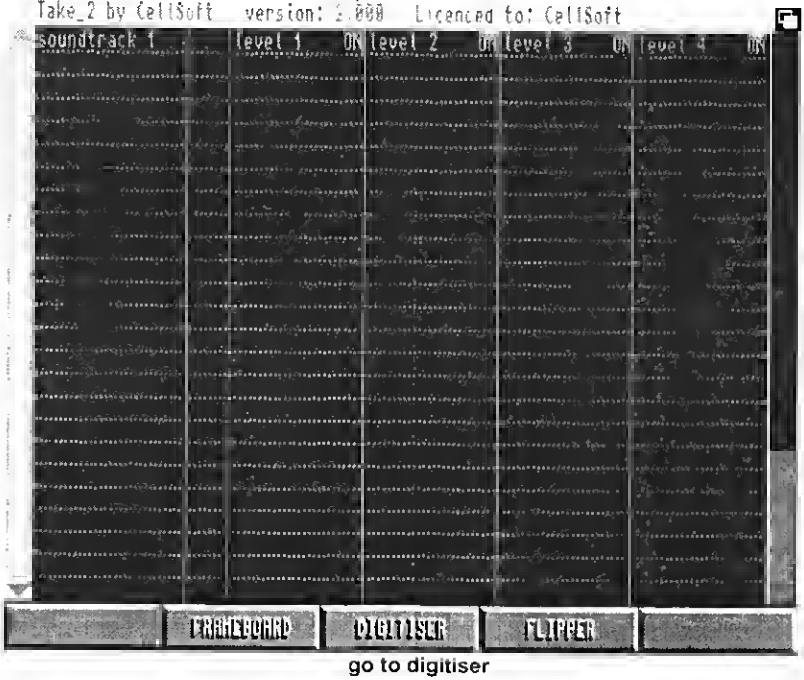
Start up your Amiga and put the Take_2 disk in any diskdrive. Double-click on the [take_2] disk-icon to see its contents, then double-click on either the [pal.conf] or [ntsc.conf] file-icon, depending on the television standard used in your country, to start the program.



The initial screen

When the program has loaded you will see an empty exposure sheet (xsheet for short). The blue dotted horizontal lines divide the xsheet into frames and the white vertical lines divide each frame into events that will be executed for that frame when playing the animation.

the exposure sheet



go to digitiser

Digitising the drawings

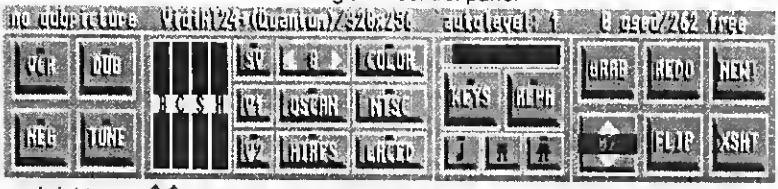
First we need to import the drawings in the computer memory. If a video source is used for this purpose, this process is called digitising. The digitiser, connected between the video

camera and the computer, will convert the analog videosignal to binary data, which a computer can work with.

Opening the digitiser interface

Click on the [digitiser] button on the bottom of the screen to start digitising the videosignal. If everything is connected correctly and the videocamera is turned on, you should see the type of digitiser that is connected displayed at the top of the digitiser control panel.

the digitiser control panel



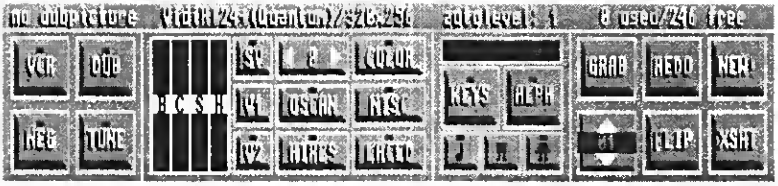
brightness ↑ ↑ contrast

Adjusting the image

Place the first drawing of the animation under the videocamera and adjust the diaphragm on the camera or the [b] slider on the controlpanel until the image has a suitable brightness. You can enhance the contrast of the image with the [c] slider. Adjust the viewfield of the camera, using the zoom or reprostand, until the drawing is framed correctly. Tape the pegbar down and focus the image.

Setting the shoot count

If your animation is intended to be on 'ones', the shootcount, just below the grab button, should be set to '1'. Use the [decrease] button under the number to decrease the value. Of course, if the animation is intended to be on 'threes' or 'fours', you just adjust the shootcount accordingly.



Hiding the digitiser control panel

The lower part of the image is obscured by the control panel. Press the [right mouse-button] to hide the control panel. Because the digitiser module has no menus attached to it like the main screen, the right mouse-button is instead used to push the control panel behind the image and to get it back in front again.

Storing the pictures in memory

Press the [left mouse-button] to grab (store to memory) the picture. Replace the drawing with the next one in sequence and grab again. Repeat until all drawings are stored to memory.

Checking the animation

Starting the flipper

Press the [right mouse-button] to get access to the controlpanel again and click on the [flip] button in the bottom right. This will start the flipper, showing a cycle of the animation. Click the [left mouse-button] to stop flipping.

Inspecting individual frames

When the flipper controlpanel appears you can step through the animation using the single-frame buttons in the middle of the panel. If a single-frame button is held down for longer than a brief moment, the animation will be played at halve speed.

the flipper control panel

the single frame buttons ↑ ↑

Hiding the flipper controlpanel

The lower part of the image is obscured by the controlpanel. Press the [right mouse-button] to hide the controlpanel. Like with the digitiser module, the right mouse-button is used to push the controlpanel behind the image and to get it back in front again.

Using keyboard short-cuts

Since the single-frame buttons on the controlpanel are no longer accessible, we must use their keyboard short-cuts instead. Press the [left arrow-key] on the keyboard to go back a frame and the [right arrow-key] to advance a frame. If the arrow-keys are held down for longer than a brief moment, the animation will be played at halve speed.

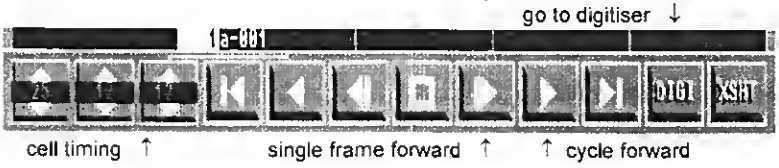
Altering picture timings

Now press the [backspace] key on the keyboard (the left pointing arrow on the top row) to go to the first frame of the animation. Press the [right mouse-button] to get the controlpanel back and change the [cell timing] button (third

number gadget from the left) to '12'. This will create a hold at the beginning of the animation.

Cycling through the animation

Click on the [cycle forward] button, located at the right of the single-frame forward button. You can now see the result of the changed timing of the first picture. The xsheet will also reflect this change, so there's no need to duplicate the hold there.



Returning to the digitiser

Press the [left mouse-button] to stop the animation and click on the [digi] button to return to the digitiser screen.

A multilevel line-test session

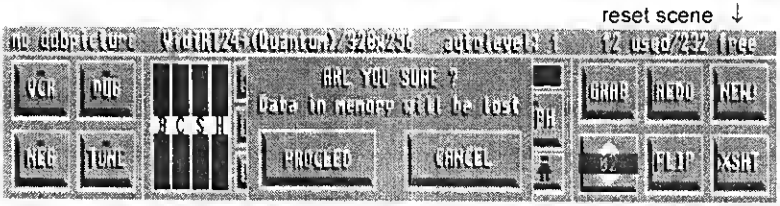
Preparing the tutorial

Something to work with

For the next tutorial we need a multilevel animation (pencil on paper), such as 2 characters animated on separate levels. If you don't have such an animation at hand, two separate objects animated under the camera to form a 2-level scene will do as well.

Clearing the scene from memory

Click on the [new!] button to clear the current animation from memory. This will also reset the programme to its default state, like it was when it was first started. Click on the [proceed] button when the confirmation requester appears. We can now begin with a clean slate.



confirmation requester

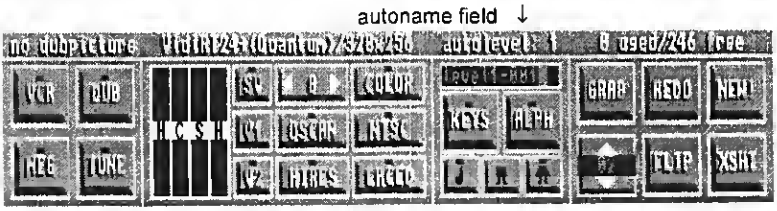
Digitising a multilevel animation

Adjusting the video frame

Place the first drawing of first level under the videocamera and adjust the video frame (zoom in/out or move camera up/down) so that the correct portion of the drawing is captured. Refocus the image.

Providing the initial picture name

Click in the [autoname-field] on the controlpanel (under the autolevel: 1 text) to direct the keyboard input there. A blue cursor appears. Type [level1-001] and press the [return] key.



Grabbing the first level

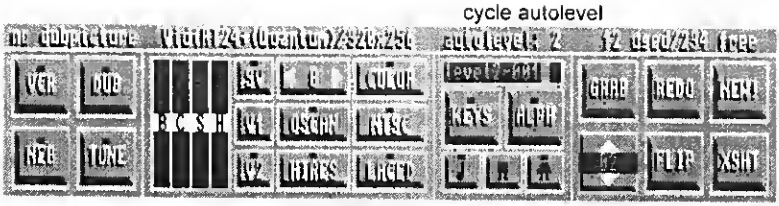
Press the [enter] key on the keypad (on the right side of the keyboard) to store the picture in memory. Grab all the drawings of the first level. If you adjust the shootcount value before grabbing each picture, the animation will have the correct timing when flipped.

Changing the target level

Before we grab the second level, the auto-xsheet target level should be set to level 2. Click once on the [autolevel: 1] text above the autoname-field. It will change to autolevel: 2. The next grabbed picture will now be in be added to level 2.

Changing the initial picture name

Click behind the last character in the autoname-field on the controlpanel and press the [backspace] key (the left arrow on the top row of the keyboard) until only the word 'level' remains. Type [2-001] and press [return]



Grabbing the second level

Place the first drawing of the second level under the videocamera and proceed to store the pictures to memory by clicking on the image on screen or pressing [enter] on the keyboard.

Checking a multilevel animation

At this stage, we can take a look at the two-level animation. Click on the [flip] button to start the animation.

Checking multiple levels

You will notice that the pictures on both levels are displayed, but in black and grey. Don't panic about the loss of color, the animation can be compiled in full color but not in realtime.

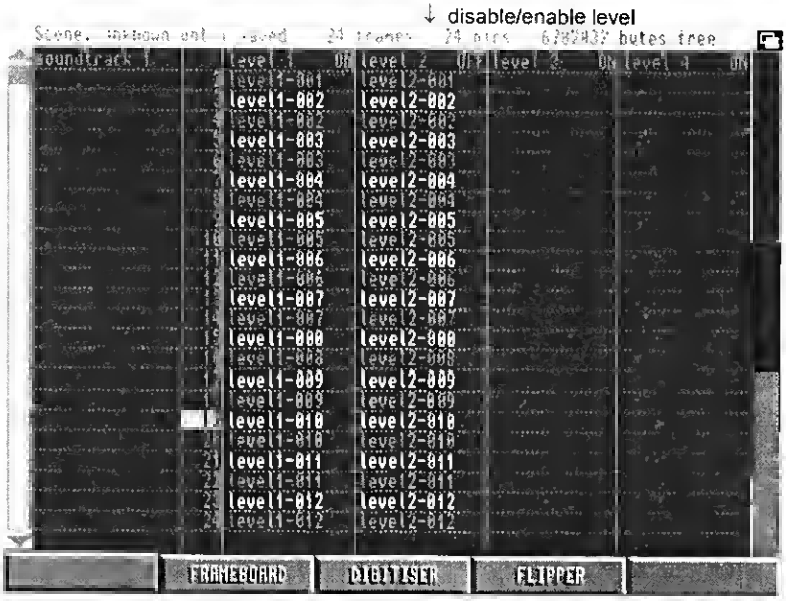
The advantage of this 'preview'-method is that you can alter anything on any level on the xsheet and see the result immediately, whereas otherwise you would have to wait until all frames are re-generated. Also, no extra memory is used and no permanent alterations are made to the original pictures.

Returning to the xsheet

Press the [left mouse-button] to stop the animation and click on the [xsht] button to return to the main (xsheet) screen.

Disabling a level

Each of the four levels can be enabled or disabled. All levels are currently enabled. Click on the word [on] above level 2 to disable it. Click on the [flipper] button to check the animation again.



Checking individual levels

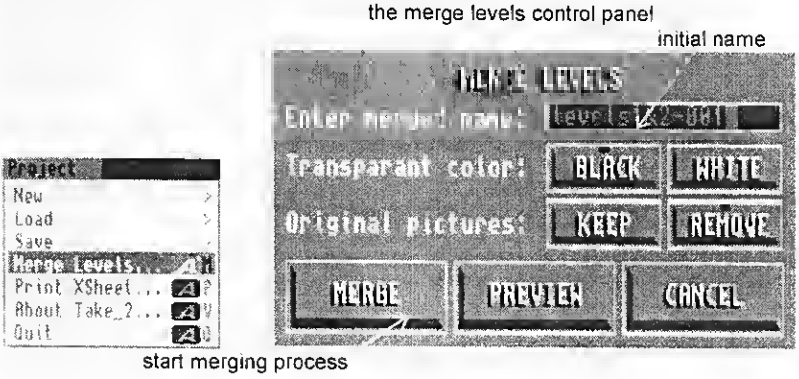
When only 1 level containing cells is enabled (on), the flipper will show it in full resolution. This allows you to work on each level separately without losing detail. When all levels are finished, the multilevel animation can be inspected before composing the levels into a final image ('merging' in Take_2 terminology).
Stop the animation and to return to the xsheet.

Merging multiple levels

We can now merge all levels into a 1-level animation. For each frame in the scene a new picture will be created by layering the pictures in each level onto each other, as if they where painted on transparent cells (or onion skins).

Opening the merge requester

Enable level 2 again by clicking on the [off] button in the level header. Choose [merge levels] from the project menu to get access to the merge levels controlpanel.



Providing the initial name

Because new pictures will be created, an initial name should be given to the first picture to merged. Click in the [mergename-field] besides the enter merged name: label, type [levels1&2-001] and press [return].

Merging the scene

Now click on the [merge] button to start merging the scene. You can monitor the merging process on the xsheet as it is updated. After the xsheet jumps back to its original frame position, you can check the result in the flipper.

Making a complete scene

Preparing the tutorial

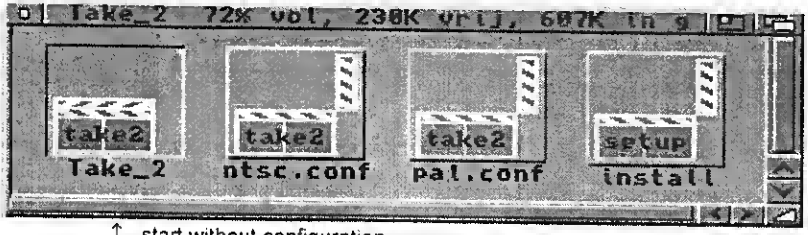
Something to work with

In the 'Tutorial' directory on the program disk there are 10 pictures created with a paint package and 3 sound samples recorded with a soundsampler. We will use these files to create a complete multilevel animation and soundtrack.

Quitting Take_2

Choose [quit] from the project menu. A requester will pop up warning you that all data (pictures and xsheet) in memory will be lost. Click on the [proceed} button. The programme is removed from memory and the Workbench is displayed.

Double-click on the [take_2] file-icon to restart the programme without a configuration.



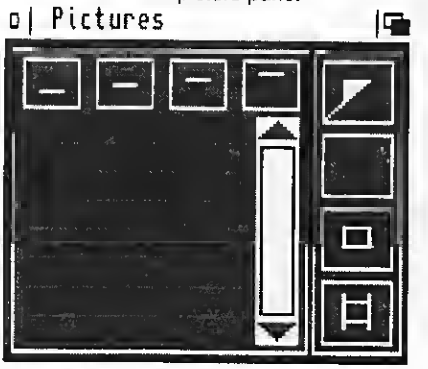
↑ start without configuration

Importing pictures from disk

Opening the picture panel

First we need to load some pictures to work with. Choose [picturepanel] from the editpanels menu. The picturepanel is used to manage the pictures in memory and to create initial cells on the xsheet.

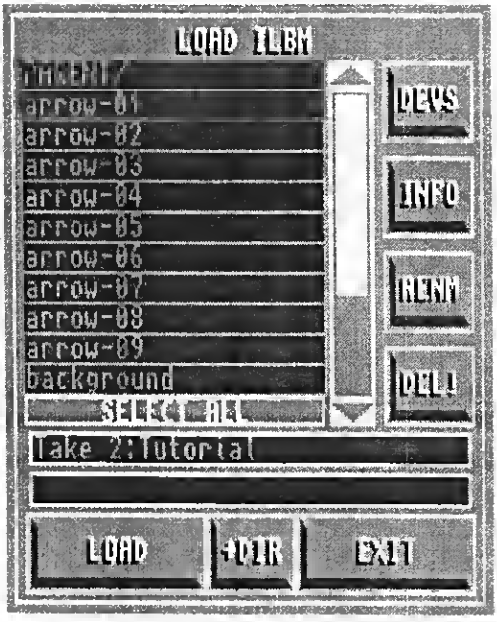
the picture panel



Accessing the file-requester

The picturepanel has its own menu-bar in case individual pictures have to be loaded from disk. Choose [load>ilbm] from the picturepanel menu. The load ilbm file requester will now be displayed.

the load ilbm file requester



load selected pictures

close file requester

Selecting picture files

Select [take_2:] from the displayed disklist to see the contents of the disk. Now double-click on the (blue) [tutorial] directory-name. Wait until the files are displayed and click on all filenames that begin with [arrow-] prefix. Use the scrollbar the access the [background] file and select it.

Transferring picture files to memory

Click on the [load] button to load the selected pictures into memory. The picturecount on the titlebar is updated while the

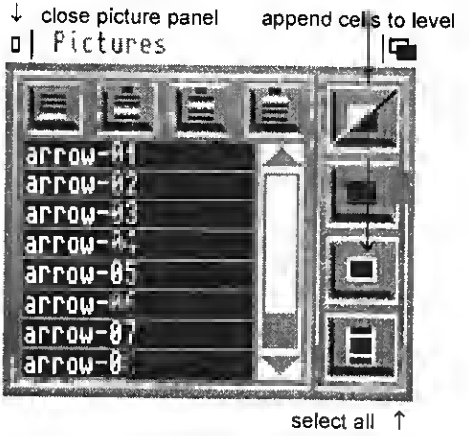
pictures are loaded. Click on the [exit] button to remove the file-requester when the loading is completed.

Creating cells from pictures

First we will create an initial xsheet. The background picture should be in level 1, while the arrow-pictures should be in level 2.

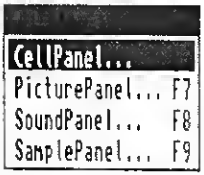
Appending cells to the level

The loaded pictures are now shown in the picturepanel display. Click on the [select all] button in the bottom right and on the [append cells] button just on top of it to create the initial cells on the xsheet. You will see that each picturename is now displayed twice in the column labelled level 1.



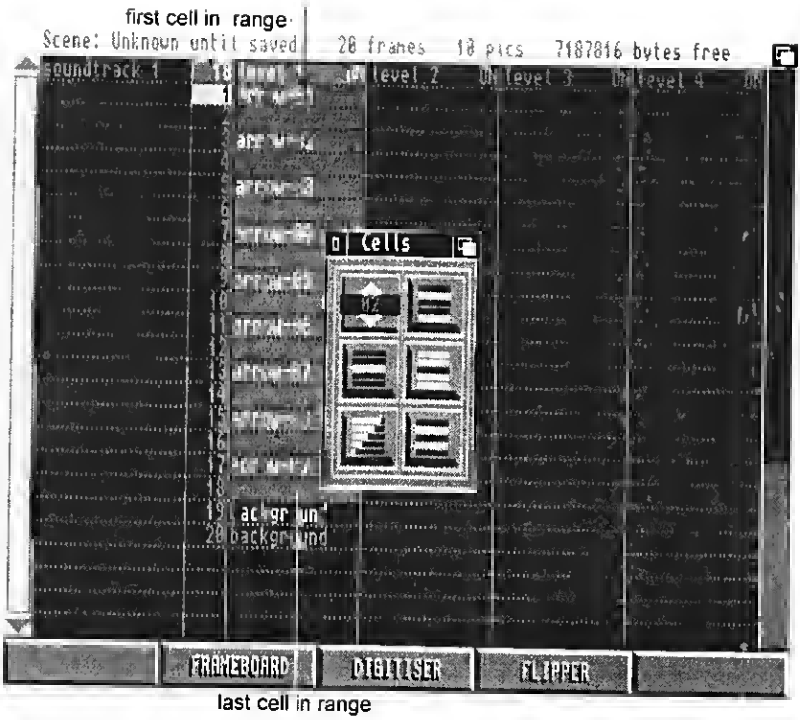
Opening the cellpanel

Click on the [close picturepanel] button and choose [cellpanel] from the editpanels menu. This will bring up the cellpanel containing 5 buttons and a number button. These are used to edit the cells on the xsheet.



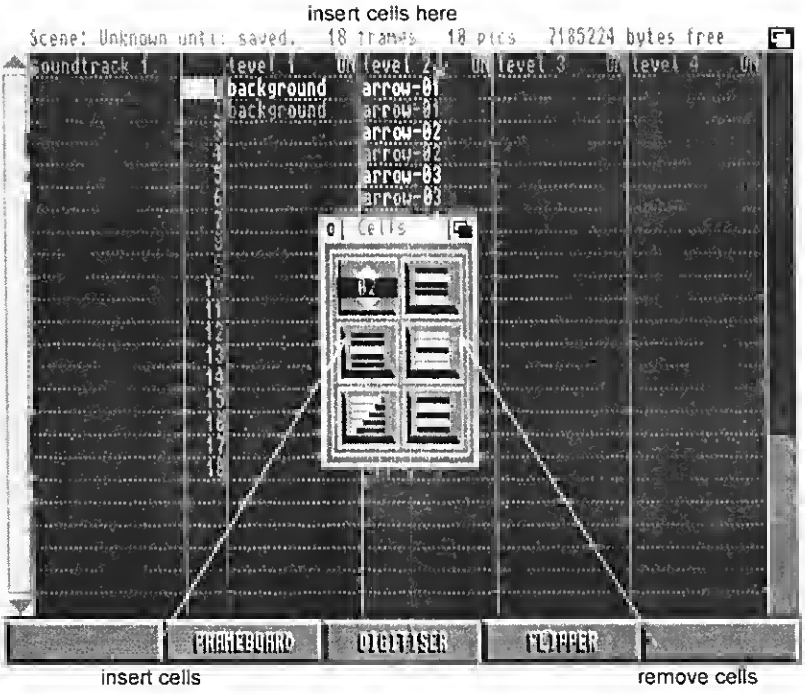
Selecting a range of cells

We must first select the range of cells we want to alter. Double-click on the [first cell] (besides framenumber 1) to mark the start of a range. The pointer becomes square-shaped and the framenumber is colored red. Go down to frame 18 and click once with the lefttop of the pointer on the [blue cell next to frame 18]. All cells between the defined points will now have a red background, indicating that they are part of the range.



Copying cells to another level

Click on the [insert cells] button just below the repeatcount on the cellpanel (the pointer becomes 'to' shaped), then on the [first cell position in the level 2 column]. A copy of the selected cells is transferred to the new position, effectively creating the second level.



Removing selected cells

Note that the ranged cells in the original column are still selected to allow other actions with the selected cells. If you now click on the [remove cells] button next to the insert cells button you just used, the selected cells are removed from the exposure sheet.

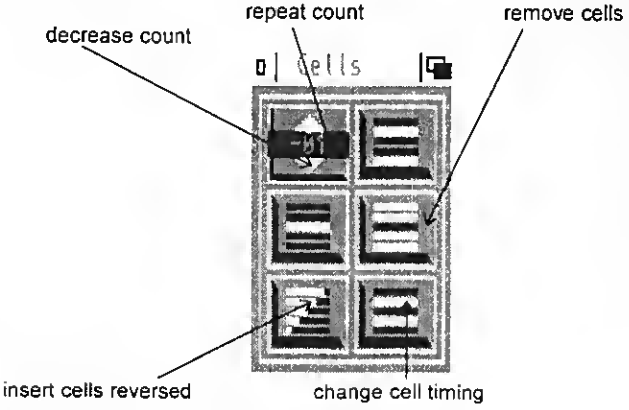
Editing the exposure sheet

Click on the [flipper] button at the bottom of the screen to inspect the 2-level animation. It is obvious that the animation

isn't totally correct. The arrow should vibrate, then gradually come to a halt when it hits the tree. Stop the animation and go back to the xsheet using the [xsht] button.

Changing the timing of ranged cells

Drag the [cellpanel to the right] so that level 2 is no longer obscured by it. Set the repeatcount on the cellpanel to [-1] by clicking on the [decrease] button just below it (3 short clicks). If you now click on the [cell timing] button at the bottom right of the cellpanel, all blue cells will disappear. Each picture will be shown for 1 frame only, speeding up the animation.



Reversing a range of cells

Set the repeatcount' on the cellpanel to [1] and create a range of cells [from 'arrow-05' to 'arrow-09'] (Remember to double-click the first cell of a range).
Click on the [insert cells reversed] button in the bottom left corner of the cellpanel and click on the [empty cell] just below the last cell in the range. A reversed copy of the selected cells is inserted.

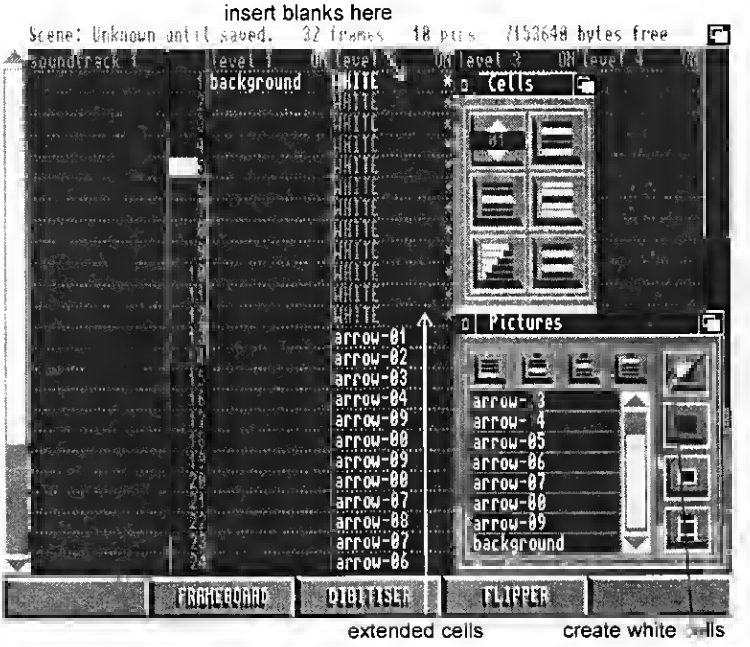
Use the [remove cells] button on the cellpanel to remove the selected cells.

Inserting cells into a level

Choose [picturepanel] from the editpanels menu and [rearrange both panels] so that all buttons as well as levels 1 and 2 can be accessed.
Select [arrow-08] and [arrow-09] on the picturepanel, click on the [insert cells] button on the cellpanel and create the cells at frame 6 in level 2.
Repeat this action as follows:
select [arrow-07] and [arrow-08] and insert at frame 9
select [arrow-06] and [arrow-07] and insert at frame 12
select [arrow-05] and [arrow-06] and insert at frame 15
select [arrow-04] and [arrow-05] and insert at frame 18
select [arrow-04] again and insert at frame 20.

Creating blank cells

We should insert some blank cells at the beginning of the scene so the viewer has time to overview the site before the arrow enters the scene.
When you click on the [white part of the add blanks] button in the top right of the picturepanel the pointer will become a white square. Select the [top cell in level 2] to insert the blank cell before the actual animation.



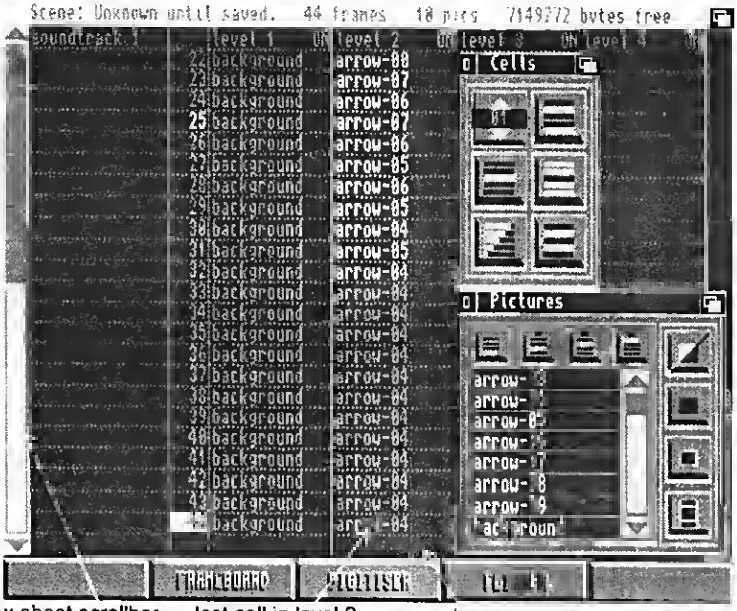
Extending cells

Click (don't release) on the new [white] cell and drag the pointer down to frame 12, while [holding down the left mouse-button]. New (blue) cells are created while you are dragging. If

you got beyond frame 12, simply reverse direction (while still holding down) to decrease the number of repeated cells.

Repeated insertion

Use the [scrollbar] on the left of the xsheet to access the end of the scene and select the [last cell in level 2] (arrow-04). Now click on the [insert cells] button on the cellpanel and select the empty place just below the selected cell, but keep the left [mouse-button] pressed. The insert cells function will be repeated until the button is released. Create a hold of about half a screen in this way.



Cleaning up

Finally, the background cell in level 1 should be adjusted to the same length as level 2. Any of the methods discussed above can be used, but [extending the cell] is probably the most convenient.
The scene is now complete. You can [close both editpanels] as they aren't needed anymore and preview the 2-level animation with the flipper. Return to the main screen when finished.

Controlling the merge process

The current frame

Before proceeding, we must first select a preview frame. Click on [any framenumber] (the narrow column on the xsheet) between 13 and the end of the scene to set a suitable 2-level current frame. The framenumber will now have a white background, marking it as the current frame.

Previewing the merged image

Choose [merge levels] from the project menu to open the merge controlpanel and click on the [preview] button. The current frame will be merged and shown for inspection. Although it looks like the merging failed, you can see part of the trunk through the spearhead of the arrow, which was originally black. The white areas of the picture should be replaced with the background instead. Click the [right mouse-button] to remove the preview screen.

The transparent color

Click on the [white] button besides the Tranparent color: label and click on [preview] again to see the result. This time the arrow should be displayed on the countryside background.Click the [right mouse-button] to remove the preview screen.

The original pictures

We can now decide what should happen to the pictures in memory that become obsolete while the merging takes place. Since we are done editing the scene, there is no need to hold on to the original pictures, especially since they are still stored on disk.
Click on the [remove] button besides the original pictures: label. Any picture that isn't needed anymore while merging will be deleted, freeing up memory.

Merging the scene

Click on the [merge] button to start the merging process. A requester appears warning you that pictures will be lost. Click on [proceed] and the merging will begin. You can monitor the process on the xsheet.

Creating a soundtrack

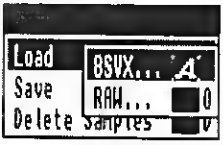
The scene could be further improved by adding sound effects to the animation. Take_2 can play up to 4 sound effects on any frame.

Importing samples from disk

Opening the samplepanel

First we need to load some the prerecorded sounds from disk. Choose [samplepanel] from the editpanels menu. Much like the picturepanel, the samplepanel is used to manage the samples in memory and create the initial sounds on the xsheet.

Loading sample files



Choose [load>8svx] from the samplepanel menu to open the load 8svx file-requester. The filelist will still contain the contents of the tutorial-directory. [Scroll to the bottom of the list] and select the 3 files that have a '.samp' extension. Click on the [load] button and wait until all samples have been loaded into memory (when the pointer is arrow-shaped again). Click on the [exit] button to remove the file-requester.

Creating sounds from samples

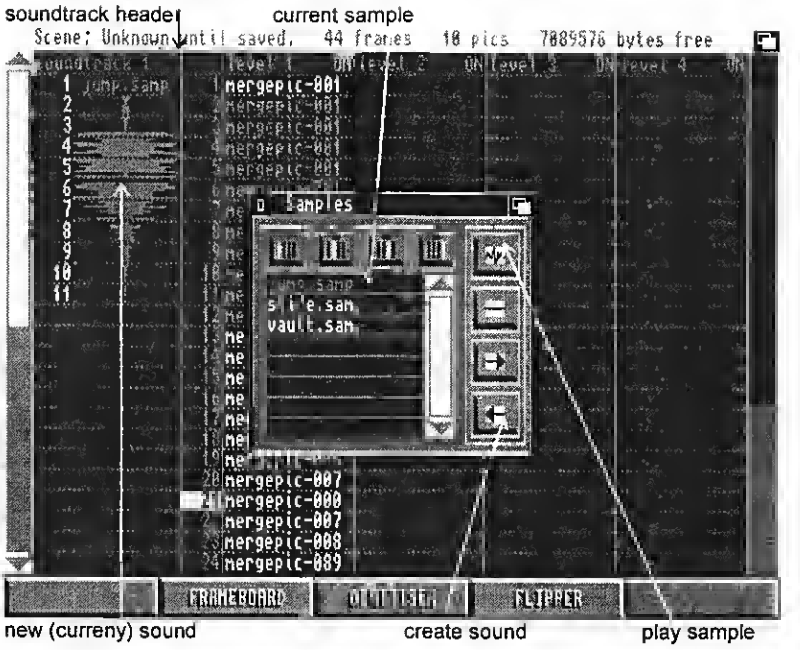
We must now tell the program when and how to play a sample during the animation by creating sounds on the xsheet.

The current sample

The loaded samples are now displayed on the samplepanel. There is always one of these colored red, marking it as the current sample. A sample is made current by selecting it. You can listen to the current sample by clicking on the [play sample] gadget on the top right of the samplepanel.

Inserting sounds into a track

Select [jump.samp] on the samplepanel and click on the [create sound] button at the bottom right of the samplepanel. Now click in the [first position on the soundtrack 1 column]. Use the [scrollbar] of the xsheet if the first frame isn't currently displayed.
A sound is created at the specified frame and a graphical representation of the sound is displayed to show the number of frames this sound will play at the current flipspeed.



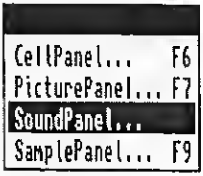
Selecting another track

Because we want to start another sound at the same frame, a free soundtrack must be used. Click on the [soundtrack header] (containing the text 'soundtrack 1') to switch to the next track. We now see the contents of soundtrack 2, which is empty at the moment. Select [slide.samp] and create a sound next to [frame 1], as before.

Synchronising sounds

Check the animation with the flipper. You will notice that the slide.samp sound, used to illustrate the 'flying arrow' animation, is too long and low pitched. Return to the xsheet when you are finished with the flipper.

Opening the soundpanel



To alter the way a sound is played we need the soundpanel. Drag the samplepanel to the right-hand side of the screen and choose [soundpanel] from the editanels menu. The soundpanel allows you to alter the 4 parameters of the current sound.

The current sound

Whenever a new sound is created it becomes the current sound, marked with a white framecount on the left of the sound's graphic display.
Any sound on the xsheet can be made the current sound by double-clicking on it. Its parameters can then be changed using the soundpanel.

Changing the sound's pitch

The pitch-parameter defines how the sound is tuned. It sets the speed at which the sound will be played. Lowering the pitch setting, will make it sound faster and higher and vice verca.
Click in the [numberfield] containing the pitch setting to activate it and use the [del] and [backspace] keys on the keyboard to delete the current value. Now enter [140] and press [return] on the keyboard. The current sound

(slide.samp) on the xsheet will be adapted to represent the new length.

Using the frameboard to find frames

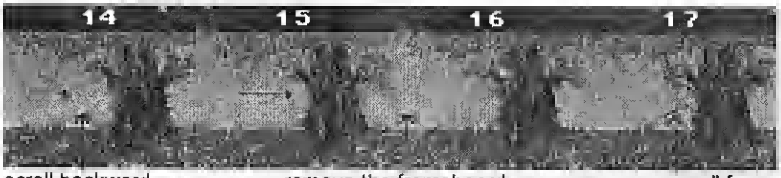
One sound is still missing in the animation. There should be a sound effect when the arrow hits the tree. It's important that it starts on the exact moment of the impact. The frameboard provides an easy way to interactively search for frames in the scene.

Opening the frameboard

Click on the [frameboard] button at the bottom of the screen. This will bring up a screen with a scaled down version of the current frame and the 3 subsequent frames. It allows you to browse through the scene without leaving the xsheet.

The frameboard buttons

The 4 frames themselves act as buttons. Clicking on the [first scaled picture] scrolls back while clicking on the [last scaled picture] scrolls forward through the scene. Both [middle pictures] remove the frameboard.



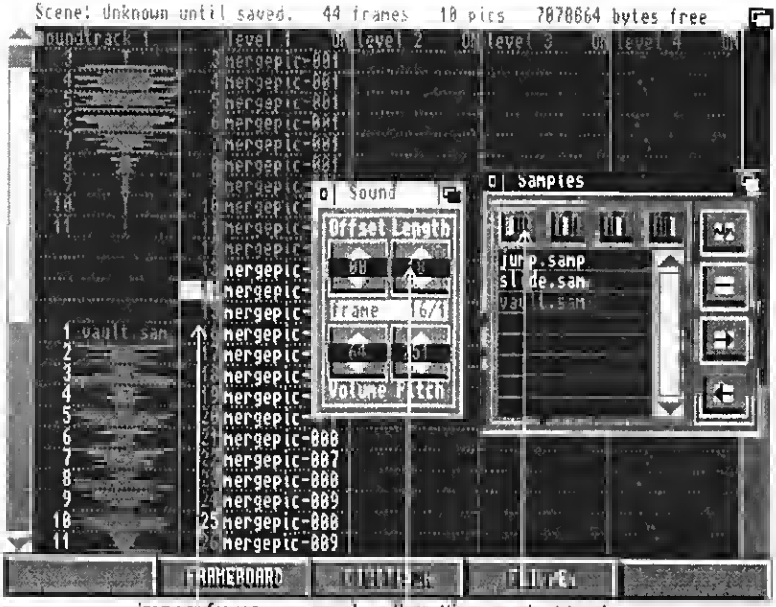
scroll backward remove the frameboard scroll forward

Interactive synchronising

Find the frame where the arrow hits the tree (it should be frame 16) and click on the [second scaled picture] to remove the frameboard. Click on the [track 1] button on the topleft of the samplepanel to display track 1 in the soundtracks column, select [vault.samp] and create a sound at the impact frame (16).

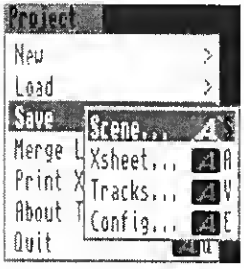
Truncating a sound

If you flip the animation you will find that the pitch of this sound is ok, but it goes on after the arrow has stabilised. Go back to the xsheet and change the value of the length-parameter to [18] on the soundpanel. The sound will be stopped after the specified amount of frames without altering the speed. Check the result in the flipper and return to the main screen when done.



Saving your work

Opening the file-requester

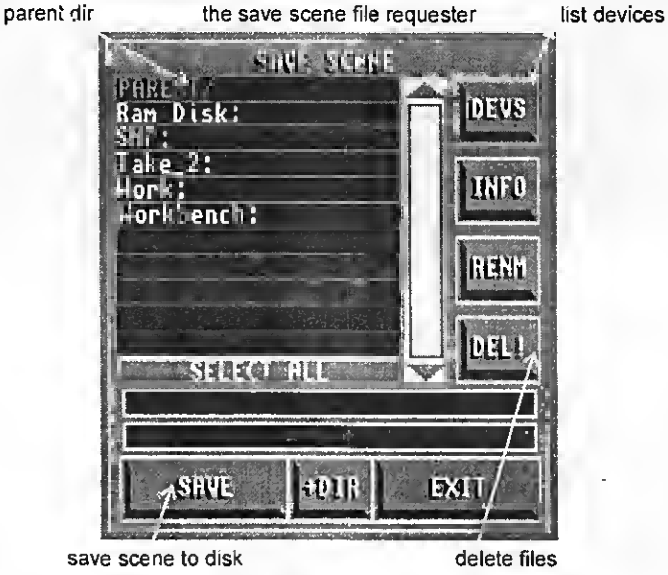


Choose [save>scene] in the project menu. The file-requester is essentially an interface between the programme's memory

and files (such as picture and sample files) stored on an external permanent medium.

Choosing a device

All known storage devices, such as floppy disks and harddisks, are displayed in a list when the file- requester is first used. You can invoke this list at any time by clicking on the [devs] button at the right side of the requester. Click on [any devicename] in the list except the take_2 disk.



Navigating the directory structure

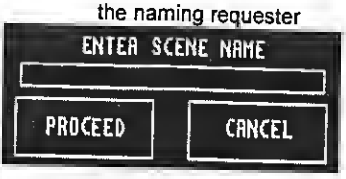
The contents of a disk are structured like a family-tree. You can go down in the directory tree by [double-clicking on a directory-name]. This reveals the contents of the directory which can include other directories. You can go up the

directory-tree by clicking on [parent] at the top of the list. Try traversing the disk structure to explore the disk's contents.

Saving the scene to disk

Click on the [save] button at the bottom left of the file-requester. Another requester pops up, asking to enter a name for the scene. Type [testscene] and press [enter] on the keyboard. A new directory is created and all pictures and the xsheet are save in it. When all files have been saved you will see the name of the scene in the list.

the naming requester



Removing a scene from disk

Click on the new [testscene] directory-name and then on the [del!] button at the right side of the requester. A warning is displayed informing you that the files on disk will be lost. Click on the [proceed] button and the scene will be erased from the disk.

the confirmation requester

Chapter 2: Working with Take_2

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historical: .xsht = levels only

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Getting the picture

Digitising drawings

In order to test drawings you need to get them into the computer memory. There are several ways to do this, using a scanner or via photo-cd disk, but 'digitising' the output of a video source is currently the fastest and most suitable method for linetesting purposes.

The digitiser models

Take_2 will only work with the special Take_2 Amiga digitiser models. When the digitiser interface is started, the programme will automatically recognize which model is attached to the parallelport and adapt its internal configuration. In short, the user doesn't have to change anything to use a particular Take_2 digitiser digitiser model.

Which model should you get to obtain optimal results ? As always, this depends on what you want to do with it and what Amiga configuration (and budget) you have. Here are some points to keep in mind when making a choice.

Controls:

The rt's have finer brightness and contrast controls.
You need a 68020 or higher cpu for the rt models to be useful for Line-testing (A1200, A3000, A4000).

Pencil-test:

Pencil drawings benefit from more greys for details.

You need an rt model and an aga chipset to display more than 16 shades of grey (A1200, A4000).

Ink-test:

Ink drawings benefit from high resolution for details.
You need the high end rt (pro) model to digitise high resolution pictures (any Amiga).

TIP:
If you need to see very fine details, remember it takes up more memory for each picture and takes longer to store to memory as well. Lowering the number of greys/colors saves memory, though. A 16 color 320x256 picture and a 2 color 640x512 picture use the same amount of memory.

Selecting the video source

The buttons labelled sv (s-video input), v1 (video input 1) and v2 (video input 2) are used to select one of the 3 possible videosources on the rt digitisers. The program will try to find a videosignal and select it automatically. If more than 1 videosignal is present, the first one found is chosen. You can select another source manually, the programme will only look for a videosource if none is present.

Adjusting the incoming video

The 4 sliders on the digitiser controlpanel can be used to adjust the brightness, contrast, saturation (color) and hue (ntsc only) of the image before any rendering is done. The brightness and contrast range is finer and wider on the rt models (50 steps) than on the older digitisers (8 steps). These settings provide additional image control on top of the camera and lighting controls.

Changing the image quality

The relevance of the resolution buttons depends on computer and digitiser hardware availability. For instance, if you have an rt pro digitiser but a non-aga Amiga, you can have a hires-laced-oscan picture but only 16 greys.
The resolution buttons (color, overscan, ntsc, hires, laced) simply toggle a resolution property on or off. Only the depth button (number of colors) is used differently. Clicking on the decrease depth and increse depth buttons (the arrows on the depth gadget) steps through the available choices while clicking on the current depth value pops up a requester with the available colors to choose from.

Calibrating the image quality

The tune button toggles between preview and true image quality.

When the tune button is off, only a lo-res monochrome (grey) image is displayed, resulting in a faster screen update. The final picture is only read from the digitiser and rendered when it's stored to memory (grabbed), which can take some time. This is the working mode. It allows continuous monitoring of the incoming videosignal.

When the tune button is on, the final resolution is read from the digitiser and rendered on the screen. This takes longer, but shows the picture as it will be when stored to memory. Storing the picture is actually faster, because the image is already read and rendered. This mode is useful for monitoring the image quality while grabbing.

Better color representation

Two options in the digioptions menu on the xsheet determine how colored images are rendered.

When the optimal palette option is on, a new palette is created for each grab. This will always give a better approximation of the original video image, but it takes extra time to calculate the new palette.

When the error diffusion option is on, a pointillist like method is used for more color accuracy,. The resulting pixilized effect is less obvious with higher resolutions, simply because the pixels are smaller.

NOTE: Merging and palettes
Since all pictures must have an identical palette to obtain good merging results, the optimal palette option should be turned off when the color images will be merged.

Automatic picture naming

Each picture stored to memory (grabbed) must have a unique name. This name is displayed in the namefield on the digitiser controlpanel. The programme will examine this field before grabbing to determine what the name of the new picture should be. To do this it follows these basic rules:

The name ends on a number

If the framenames option is off: add 1
If the framenames option is on: add last cell count

The name ends on an alphabetic character

If the alfh button is off: no change is made
If the alfa button is on: change to next character

The new name will match an already existing picture

A requester informs the user that the picture exists
If cancel is chosen: the grab is aborted
If proceed is chosen: The existing pic is replaced

The name was changed since the last grab

No change is made (it's an intentionally made change)

If the keys button is on

A requester pops up asking for the name of the key-drawing. The name of the last grabbed picture minus the number extension will be presented to save some typing (and avoid mistyping).

NOTE: Keys and auto xsheet

When the keys-mode is used while the auto xsheet option is selected, fake inbetween cells will be created, as well as the normal cells.

The naming sequence

The frame names option alters the way the auto-naming works. If turned off, each new picture name will be created in sequence (a-001, a-002). If this option is turned on, the numbering will be synchronised with the framenumbers on the xsheet, so the new name will be derived from the number of

frames that where previously created (a-001, a-003, if the shootcount is on '2').

Special recording modes

vcr

When the vcr option is on, the programme will grab pictures continuously.
A requester is displayed during grabbing in vcr mode, containing a gaugebar for monitoring memory usage and a stop grab button to interrupt the grabbing.
The rate at which pictures are grabbed depends on the digitiser model, the processor, the resolution, etc.

dub

When the dub button is on, an existing picture is superimposed over the displayed video image. This is useful for adding a linear background to many pictures, without using multiple levels.
When this option is first selected, a list of all pictures in memory is displayed too choose from. The name of the picture is shown on the leftside of the controlpanel infobar. Clicking on the this dubpic info allows you to choose a different picture to be 'dubbed'.

TIP: Aligning images.

The dub feature can be used to align images to continue an existing scene. If, for example, the new drawings are to be appended to an existing scene, the camera and pegbar placement will most likely be changed since the scene was digitised. If you load the scene first, place the last digitised drawing under the camera and dub the corresponding picture,

the new image can be adjusted until it coincides with the existing picture. Remember to turn the dub mode off, when done.

neg

When the neg button is on, the colors of the incoming video image are reversed, making it look like a photo negative. This can be used to simulate special effects that will be created in a later stage of the production.

flip horizontal

When this item in the digioptions menu is on, the incoming videosignal will be flipped over the horizontal axis (left to right). This can be used to test stock animation (reused in reversed direction) with new animation.

flip vertical

When this item in the digioptions menu is on, the incoming videosignal will be flipped over the vertical axis (top to bottom). This is mostly used in combination with flip horizontal to turn the image upside down, such as when using cameras lacking a top mounting bracket.

Grabbing pictures

grab

Clicking on this button will store the currently displayed image to memory, using the provided name. If the displayed image is not in the requested resolution (high resolution or color but not in tune mode) the picture will be re-grabbed. While this may

take a while, it is perfectly safe to change the drawing immediately after this process is started.
Clicking anywhere on the image or pressing [enter] on the keypad are more convenient ways to grab the picture, especially if the controlpanel is hidden.

redo

This will store the currently displayed image over the last grabbed picture. This is useful, for instance, if you noticed that your hand was over the drawing when you grabbed the image.

TIP: The postponed redo

If you notice a faulty picture at a later stage, you can place the correct drawing under the videocamera and fill in the name of the incorrect picture in the autoname field,. then grab and chose [proceed] on the warning requester. This will effectively replace the the unwanted image with the new one.

new!

For starting a new scene from the digitiser. This is the same as choosing [new>scene] from the project menu on the main screen. It saves you to leave the digitiser to access the menubar when you realise you are grabbing in the wrong resolution or forgot to reset the scene before returning to grab a new animation.

The digitiser controlpanel infobar

dubpic info

If the dub mode is turned on, the picture currently being superimposed (dubbed) over the incoming video image is shown here. If you click on the dubpic info, a new picture can be chosen from the picturelist. This list is also presented when the dub mode is turned on (dub button) and there's more than 1 picture in memory.

resolution info

This part shows which digitiser hardware is currently attached, if any, and the pixel resolution (width and height) that will be grabbed and displayed while in tune mode. This information is dynamically updated. If no video source is detected the message 'no video signal' is displayed.

autolevel info

If the auto xsheet option in the settings menu on the main screen is set to on, this will show to which level the newly created cells will be appended. If the option is turned off, a dash (-) is shown instead. You can change the current level from the digitiser controlpanel by clicking on the autolevel info text. It will cycle through the 4 levels.

picspace info

'How many more pictures can I store in memory ?'.
The number of pictures are stored already and how many can still be grabbed is displayed above the grab button . You can check if the number of drawings you intend to digitise will fit in memory before you start. If not, lower the resolution and/or

number of colors until the 'pics free' info exceeds the number of drawings you want to store.

Some notes about digitising

Digitising drawings is not shooting

If you are used to recording to film or video, it's easy to mistake grabbing pictures for shooting. You should however look at grabbing as importing the drawings in the computer memory. Each drawing should be grabbed only once. Storing images more than once not only wastes memory, and later diskspace, but you will inevitably end up with confusing names for the pictures.
Pictures correspond to drawings, not film or video frames. The cells, created automatically or manually from the pictures, tell the flipper which grabbed drawings should be displayed for each frame. This is probably the biggest difference with digital film/video editing systems. Animations tend to reuse frames for efficiency, needing far less drawings than there are frames, while live productions typically have a different image for each frame.

Careful picture naming avoids problems

Porting xsheet changes

For linetesting, it is important that any changes made to the timing can easily be ported to the original (paper) exposure sheet. It is therefore essential that the picture name should correspond to the id on the drawing, even more so if the xsheet is to be printed.

Loading multiple scenes

When scenes are to be saved to disk, it isn't a good idea to use the programme's default 'a-001' naming. When you try to load a scene that uses picturenames that are already in memory a requester will ask you if you want to replace the picture with the one on disk, but will never allow to have 2 pictures with the same name in memory.

Other ways to get pictures into memory

If the animation artwork is created on the computer the digitiser obviously can't be used to import these images into Take_2. In these cases the pictures can be loaded from disk in one of two ways, depending on the way they where stored to disk.

The picturepanel

The picturepanel shows a list of all pictures currently in memory. It is used select and delete pictures and gives access to the picturepanel menu for loading picture an anim files. The current level, create blanks and create cells buttons are used to create initial cells from the pictures.

Importing picture-files from disk

The iff ilbm graphic file format

On the Amiga, images are stored on disk in the iff ilbm file format. All software that handles images knows how to load and save this graphic file format.

Take_2 scenes and iff ilbm files

A Take_2 scene is essentially a directory containing iff ilbm picture files and an xsheet file defining how to use these pictures. If the images are created in another package this organisation is missing, so the pictures must be imported manually.

Creating pictures from iff ilbm files

You can load individual images by opening the picturepanel and choosing [load>ilbm] from the picturepanel menu. You can then select the pictures you want and click on [load] to transfer the images from disk to memory.

Creating cells from loaded pictures

Loaded pictures are appended to the picturelist on the picturepanel and can be used to create cells. If the auto xsheet option is on, the initial cells will be created immediately in the current level (set on the picturepanel) while loading, using the repeatcount on the cellpanel to determine how many cells to create from each picture.

Importing animation-files from disk

The iff anim graphic file format

On the Amiga, animations are stored on disk in the iff anim file format. Most software that handles animations knows how to load and save this graphic file format.

Take_2 scenes versus iff anim files

Although Take_2 scenes and iff anim files are both ways to save animations to disk, they have little in common.

A Take_2 scene is basically a directory containing picture files and files describing in which order and combination they should be used. There is additional information where to find sample files, when and how to play them and a file to recreate the original speed settings. Scenes are only supported by Take_2.
Iff anim's are single files, containing a picture for each frame. There is no way to save multilevel scenes or soundtracks. The pictures are chained together, making it very cumbersome to change the animation. Most animation packages support the anim file format.

Creating pictures from iff anim files

You can load animation files by opening the picturepanel and choosing [load>anim] from the picturepanel menu. The animation will be split into separate pictures to allow flexible editing. You will sometimes need more memory than was needed to create the original anim file.

Creating cells from iff anim files

If the auto xsheet option in the settings menu is on when loading an anim file , the programme will create a 1 level animation, retaining sequence and timing by creating cells from the individual pictures.

Note: The naming of iff anim derived pictures
The names for each individual picture are derived from the filename with a unique number added to identify each separate picture. anim's created with Take_2 contain the original name for each picture, so that a complete reconstruction can take place. When the Anim is re-saved using another package, this information will probably be lost.

Flipping the animation

Invoking the flipper

The flipper module will create each frame of the animation from the information on the xsheet and play the animation and its soundtrack in real time or let you browse through it frame by frame. Any change on the xsheet will result in a change in the way the flipper plays the animation.

Flipping the scene

The flipper can be started from either the xsheet or the digitiser by clicking on the [flipper] and [flip] button respectively. This invokes the flipper in 'cycle forward' mode. The animation will be played repeatedly until a [mouse-button] or [key] on the keyboard is pressed, after which the animation is stopped and the flipper controlpanel will be displayed.

Flipping a range of cells

If ranges of cells are selected on the xsheet, only these will be shown. This allows to play parts of a scene to find a suitable cycle or to check portions of a long scene. This feature is also useful to temporarily exclude cells.

Flipping selected levels

Each level on the xsheet can be switched off or on by clicking on the rightside of the level header (on the word on/off). Only levels that are switched on will be shown by the flipper. This is especially useful to check individual levels when working on a multilevel scene.

Jumping to a frame

You can go to whichever frame you like with the flipper, either from the xsheet or from within the flipper itself.

From the xsheet

Double-clicking on a framenumber on the xsheet invokes the flipper and brings it to the specified frame. It stops immediately at that position. You can then use the flipper controlpanel as usual.

From the flipper

If you click on the framenumber indication on the flipper controlpanel, a cursor will appear in it, allowing to enter a new framenumber. Pressing [return] while the cursor is active brings you to the specified frame, anything else leaves the current frame unchanged.

The StartFrame options

Some users want the flipper to start at the first frame of the scene, others want the flipper to start from the frame they where on when they last used the flipper.
If the startframe option in the flipoptions menu is set to first, the flipper will restart from the first frame of the scene every time the flipper is invoked.
If the startframe option in the flipoptions menu is set to current, the flipper will start with the current frame, which is normally set to the frame the flipper was on when you returned to the xsheet screen.

NOTE: Setting the current frame

The current frame can be set manually by clicking on the framenumber, in which case this frame will be the first frame when the flipper is in startframe>current mode.

The navigation controls

Realtime animation

Clicking on either the [cycle forward], [cycle backward] or [play once] buttons will cause the flipper to play the animation in realtime. A precision timer is used to keep the framerate in pace with the set speed.
If you want to be absolutely certain that the framerate is met, you should set the speedcheck option in the flipoptions menu on the main screen to on. You will then be informed if the hardware was unable to reach the requested speed.

Single-frame movement

Clicking on either the [single-frame forward] or [single-frame backward] button will cause the flipper to display the next or previous frame in the animation respectively.
Holding down the [left mouse-button] over these buttons will repeat this action continuously, causing the flipper to play the animation at the alternative speed, but without removing the controlpanel. This allows you to monitor the frame information on the flipper infobar at a comfortable (slower) speed. The speed is not guaranteed to be realtime, due to system overhead.

Fast search

Holding down the [right mouse-button] while one of the single-frame buttons is selected will switch the flipper to fast search mode, much as the fast search modes on vcr's and Steenbeck editing tables. Don't be fooled by the speed. Fast search just skips a number of frames, so the speed of your Amiga isn't enhanced without installing an accelerator board.

Note: Fast search short-cuts

Holding down the [left shift-key] together with one of the short-cuts for these buttons (left and right arrows) has the same effect.

Finding the first/last frame

You can return to the first frame of the animation at any time by clicking on the [goto start] button. This feature can be used for resetting the scene before recording to video.
Clicking once on the [single-frame backward] button while on the first frame, brings you to the last frame of the animation.

The flipper infobar

The information displayed on the top of the flipper controlpanel resembles a frame on the xsheet.
Only the cells that are currently being displayed are shown, while cells in disabled levels or cells excluded from a range are not.
Only the sound on the current soundtrack is shown. The name (and the frame position) of the sound is displayed, rather than the modulation.

Controlling speed

The flipspeed settings

The two leftmost numbergadgets on the flipper controlpanel define how many frames should be played in a second. Which of these 2 speeds is used while flipping depends on the flipmode.
The first (left) number defines the speed for the realtime playing modes (cycle forward, cycle backward and play once).
The second (middle) number defines the speed for the single-frame modes when used continuously (with the single-frame buttons in combination with the shift key).

The basespeed

Which is the correct speed to play the sound ? It must stay in sync and must thus be aware of the speed in frames per second.

The simulated media

The 'real' animation speed (the speed of the simulated medium) is set with the basespeed-requester. This can be accessed by choosing basespeed in the settings menu on the xsheet. This number should always be set to the speed for which the timing of the animation was made, such as 24 for film, 25/30 for video or even 15 for CD-I preparation.

The 1-second markers

Each framecount number that is a multiple of the basespeed is marked in white. These '1-second markers' are useful while editing and as a reminder of the current basespeed setting.

NOTE: Convenient storyboard timing

This feature can also be used to make storyboard timing with Take_2 easier. Setting the basespeed to 1 or 2 gives a better overview and timing control, while prerecorded music or dialogue will stay in sync.

The SpeedCheck option

It is essential for a line-test system to display the tested scene at the same framerate as the target medium (24 fr/sec for film and 25 or 30 fr/sec for video, etc...). If the hardware can't cope with this speed at the current resolution the user should know about it, so he can adjust settings or re-shoot the scene in a lower resolution. Some users, on the other hand, don't care about the actual speed as long as it has the timing they want and they don't plan to reshoot the scene on another medium. When the speedcheck option in the flipoptions menu on the xsheet is turned on, a requester will pop up to inform you each time the requested speed couldn't be reached. This requester displays the exact speed in frames per second the animation was actually flipped, if it differs from the set speed. It needs at least 1 second of animation to calculate the actual speed.

NOTE: Speed and resolution

The topspeed of the flipper depends on the resolution of the pictures. Even an Amiga 4000/40 can't flip hires-interlaced-HAM8 pictures at 25 frames a second (if each frame is different, that is). For Line-testing, a choice will have to be made between more shades (best for rough sketches) and a finer pixel resolution (best for detailed cleaned drawings).

Soundtrack playback

Restarting sound

When an animation is restarted from the flipper controlpanel, the remaining part of any pending (partly played) sound is started. The soundtracks are also played when in any of the single-frame and fast search modes. This is only meant as a cue, the sound can be distorted while playing backwards, but will always be in sync.

The audio filter

The audiofilter option in the flipoptions menu gives control over the hardware audiofilter of the Amiga, while playing sounds in the flipper. This filter prevents aliasing distortion but cuts all frequencies above 7000 Hz. By disabling it the higher tones will come trough, giving a clearer sound. Distortions will be more apparent, however.
The audiofilter option is off by default.

Note: The power-led indication

The powerled of the Amiga is switched off or dimmed when the audiofilter is disabled.

Transferring the animation to video

The Amiga and video output

The signal coming out of a computer's rgb-port is only suitable for computer monitors. The Amiga, however, has always been a tv/video friendly computer, mainly because it targeted the games market and should be able to connect directly to a television set. Because of this, the low-end Amiga's (the A500,

A500+, A600, A1200 and some A2000's) have a video output while the high-end Amiga's (the A3000 and A4000) intended for 'serious' use have not. This video output delivers a low quality monochrome (color for the A1200) signal which is suitable for transferring linetests to tape, but strangely enough not for playing games.
If your Amiga doesn't have a video output or you want a better quality signal, you will need an rgb-converter or a gen-lock to transfer your animations to video.

Adapting the screenmode for video

Since Workbench 2.0 new screenmodes have been added which are not compatible with video signals, because they use higher horizontal and vertical frequencies to obtain a more stable, flickerfree display. While these are more pleasant and less tiering for the human eyes, they are unsuitable for video output.
If these new screenmodes are available on your system (c.q. if you have a multiscan monitor), Take_2 will choose one of these 'easy-on-the-eyes' modes when creating new screens, so that users owning a multiscan monitor can benefit from their investment.
In order to get your animation on video-tape, however, the screen must be forced to a 'video-compatible' screenmode. Setting the videomonitor option in the settings menu to on will do just that.

Removing animation artefacts

In some cases, large areas of certain colors can cause distracting glitches in the animation. This is because only part of the color is changed when the video-beam reaches that part of the image. This phenomenon can be avoided by using 2 screens of which one is displayed while the other is changed,

then switching both screens. This technique is called 'double-buffering'.
Set the [anti-glitch] option in the flipoptions menu to on to remove glitches and other artefacts in the animation. This option has a speed penalty, though.

Removing the mouse pointer

It doesn't look good if a computer pointer is obscuring your linetest video. You can hide the pointer in the corner of the screen before recording, but the mouse could inadvertently be moved while the animation is running.
Set the hidepointer option in the flipoptions menu to on to remove the pointer while flipping in realtime.

Positioning the Animation

The flipper screen can be positioned freely anywhere on the monitor by clicking on the displayed picture, then dragging it (by moving the mouse while holding the left mouse-button pressed). This can be useful for calibrating the display before transferring the animation to video and for centring overscanned pictures. This is easier if a second monitor is connected to the output of the vcr.

Centering the image

The autocentre button, located between the single-frame backward and single-frame forward buttons on the flipper controlpanel, will (re-)centre the screen automatically. It can be used to reset the position of the display after moving it around.

General procedure

1. Create a hold at the end of the scene
2. Set the flipoptions as needed
3. Click on [flipper] to go to the flipper screen
4. Calibrate the display by dragging the image screen
5. Press [right mouse-button] to remove the cntrolpanel
6. Press [backspace] to go to first frame
7. Hide the pointer in bottomright corner of screen
8. Start recording with video recorder
9. Press 'o' to play the animation once
10. Stop or pause the video recorder on the last hold
11. Click [left mouse-button] to stop the animation

Editing the exposure sheet

Creating initial cells on the xsheet

There must already be cells on the xsheet before you can start copying, moving or deleting them. There are tree ways of creating these initial cells.

Manual method

You can create cells from the pictures listed on the picturepanel. Select one or more pictures in the list and click on the [create cells] button.
New cells referring to the selected pictures will be appended to the current level. You can change the current level by clicking on 1 of the 4 [level buttons] at the top of the picturepanel. The number of cells created from each picture depends on the value of the repeatcount gadget on the cellpanel.
This method is most suitable when creating complex and unstructured scenes.

Semi-automatic method

You can create a range of cells by typing in the name of the first and last cell of the range. Click on the [open auto-requester] button on the cellpanel and click on the [auto] button at the top of the requester. Enter the name of the first and last cell in the 2 name-fields and click on the [do it] button to create the range of cells.
New cells referring to the named pictures will be appended to the current level. You can change the current level by clicking on 1 of the 4 [level buttons] at the top of the picturepanel. The number of cells created from each picture depends on the value of the repeatcount gadget on the cellpanel.

This method is most suitable when creating complex, but structured scenes.

Automatic method

If you set the auto xsheet option in the settings menu to on, the programme will create new cells each time a picture is added to the picture list. This option works differently depending on the source of the new pictures as described below.
This method is most suitable when creating simple, straightforward scenes.

Digitising pictures

New cells will be created in the current level for each picture that is stored to memory. You can change the current level by clicking on the [auto level] button at the top of the controlpanel. The number of cells created from each picture depends on the value of the shootcount gadget on the digitiser controlpanel.

Loading pictures

New cells will be created in the current level for each picture that is loaded from disk. You can change the current level by clicking on 1 of the 4 [level buttons] at the top of the picturepanel. The number of cells created from each picture depends on the value of the repeatcount gadget on the cellpanel.

Loading anims

New cells will be created in the current level for each picture that is extracted from the anim file. You can change the current level by clicking on 1 of the 4 [level buttons] at the top of the picturepanel. The number of cells created from each picture depends on the number of repetitions in the anim file.

NOTE: Automatic naming

There is a different tradition concerning the naming of animation sequences in European and Anglo-Saxon countries. In General, Anglo-Saxon users should set the frame names option in the settings menu on, while European users should leave it off.

Selecting cells on the xsheet

Most editing actions, such as copying and deleting, act on selected cells. These cells must be selected before performing the edit action.

Selecting individual cells

Selecting single cells on the xsheet is like selecting pictures on the picturepanel. If new cells are created, the repeatcount on the cellpanel is used to multiply the number of copies created from each selected cell.
Click on an un-selected cell to select it.
The cellname turns red. The level-header will have red colored characters whenever at least 1 cell in the level is selected. This serves as a reminder should all selected cells be on undisplayed parts of the xsheet.

Note: Auto-selecting cells

In some cases, if many cells with the same name (referring to the same picture) are shattered all over the xsheet, it's easier to open the auto-requester and use the find function to auto-select these cells.

Selecting ranges of cells

Selecting a range of cells on the xsheet defines the parts of the xsheet to be used by a function (and which cells should be left unchanged). The ranged cells are treated as unified blocks. When copying, the cells that are part of a range are not multiplied by the repeatcount on the cellpanel.
Double-click on a cell to mark the start of a range of selected cells. The corresponding framenumber turns red to indicate the marked start. Click on another cell to mark the end of the range. This can be a cell on another level and before the first marked cell.
The background of all cells in the range turns red. The level-header will have red colored background whenever at least 1 cell in the level is in a range. This serves as a reminder should all selected cells be on undisplayed parts of the xsheet.

Un-selecting cells on the xsheet

Un-selecting individual cells

Clicking on an already selected cell will un-select it. Clicking on a cell in a range will exclude it from the range. The cellname is colored either white or blue, as appropriate, and the background is colored black.

Un-selecting all cells in a level

Clicking on a level-header that is indicating selected or ranged cells (red text or background) will un-select all selected cells and remove all ranges in the level.

Un-selecting all cells on the xsheet

Pressing the [spacebar] on the keyboard will un-select all selected cells and remove all ranges on the xsheet. This is actually the same as clicking on each level-header in sequence.

Changing the cell sequence

The cellpanel

The cellpanel is used to edit and manage the cells on the xsheet. Most of the functions need cells to be selected on the xsheet while the copy functions will use selected pictures on the picturepanel as well.

Copying cells

Once a cell is created from a picture, either manual or automatic, it can be copied to any position on the xsheet. These copied cells refer to the same picture as the cells they are duplicates from.
Select the cells that you want to copy. If you need multiple copies of a cell, select it individually and set the repeatcount to the required number of copies. If you want a single copy of a sequence of cells, select these as a range.
Click on the [copy cells] button on the cellpanel. The pointer becomes 'to' shaped. Click on the position where you want the

new cells to be inserted. The cell that is currently occupying this position will shift to the position after the inserted cells.

Removing cells

Unwanted cells can be removed from the xsheet. Removing a cell leaves the picture it refers to untouched, it only changes the sequence and position the pictures should be displayed. For this reason, and for efficiency, no confirmation is needed as the picture isn't lost and it would slow down editing considerably.
Select the cells that you want to remove as individual cells or ranges, whatever is the most convenient.
Click on the [remove cells] button on the cellpanel to remove the selected cells from the xsheet.

Moving cells

Moving cells to another position on the xsheet can be achieved by combining the copy cells and remove cells functions.
Create a range of the cells you want to move. Click on the [copy cells] button on the cellpanel and copy the cells to the new position then click on the [remove cells] button.

Reversing cells

Drawings are often reused in reversed order to create a ping-pong cycle or simply to reverse the action.

Create a range of the cells that should be copied in reversed order. Click on the [copy cells reversed] button on the cellpanel and copy the cells to the new position, often just below the selected range. The sequence of cells is inserted in reversed order.

Replacing cells

Sometimes you need to replace all cells referring to a picture by cells referring to another picture (an alternative drawing that was stored under a different name). If this picture was used in different places on the xsheet, it could be a cumbersome and errorprone task to manually replace all instances of this picture. This task can be automated with the 'replace' function.
Click on the [open auto-requester] button on the cellpanel and click on the [repl] button at the top of the requester. Enter the name of the current and new cells in the appropriate name-fields and click on the [do it!] button. All instances of the first named cell are replaced by the second cell.

Altering cell timings

Since the speed of video and film are fixed to their respective standards, the timing of an animation (the duration a picture is displayed) must be controlled by repeating pictures instead of varying the displayspeed.
This timing is crucial for an animation to succeed.

The white and blue cells

With Take_2 it is very easy to experiment with the timing to get the best result. A cell that invokes a new picture to be displayed is shown with white text on the xsheet, while the repetition of this cell is shown in blue. The timing of a picture is manipulated by varying the number of blue cells. All tools that work on timing will work on these blue cells and will never remove or add white cells, so timing tools will never change the sequence of cells in any way.

Altering the timing of a single cell

Clicking over a cell, then dragging the mouse will alter the timing of this cell. You can increase or decrease the timing of a cell without using a cellpanel editing tool or change the repeatcount. This is especially useful if you want experiment with holds or to align the timing of a cell to a certain framenumber.

Altering the timing of multiple cells

When the timing of a range of cells should be altered, changing each cell's timing separately will be time consuming. In this case the change timing button on the cellpanel can be used to automate the procedure.
Select the range of cells to be changed (make sure to include the white cells), set the [repeatcount] to either a positive or a negative value depending if you want to stretch or shrink the timing and click on the [change timing] button on the cellpanel. The number of blue cells will increase or decrease by the repeatcount value.

Altering the overall timing of the scene

If the timing of all cells on the xsheet should be changed, to switch an animation from 'two's' to 'one's' for instance, the above method can be used but without selecting any range of cells on the xsheet.
Set the repeatcount to a positive or negative value depending if you want increase or decrease the overall speed of the animation and click on the change timing button on the cellpanel.

Altering a cell's timing from the flipper

The timing of an individual cell can also be changed while checking the animation with the flipper.
The cell timing gadget on the flipper controlpanel displays the timing value of the cell on the level it is connected with (by a white line). The gadget can be connected to another level by clicking on the level's display at the top of the controlpanel. The timing of a cell can be changed by setting the cell timing to a new value. This change will be reflected on the xsheet.

Using picture-less cells

Not every cell on the xsheet refers to a picture stored in memory. These 'virtual' cells serve as place holders to compensate timing for pictures still to be made or simulate blanks as found on traditional xsheets.

Recognising virtual cells

Any cell in the xsheet that doesn't correspond with a picture in the picturepanel, such as blanks or the virtual inbetweens used when testing keydrawings, are marked with an asterix (*) character.

Inserting blank cells

A special case of virtual cells are the blanks. These act as build-in pictures and can be used like the real pictures. These pictures do not really exist in memory but are simulated when playing the animation.
Blank pictures do not appear in the picturelist, but can instead be simulated with the create blanks button on the picturepanel. This button is divided into two parts, creating either white or black cells on the xsheet. These cells will be

displayed as white or black pictures by the flipper but have no influence, other than serving as placeholders, when merging the scene.
Select the lefttop triangle of the [create blanks] button to insert white cells on the xsheet and select the rightbottom triangle of the button to create black cells.

Simulating inbetweens

If an animation is incomplete when it is tested, only the keydrawings are ready for example, the timing of the scene can still be checked by creating fake cells as stand-ins for the missing pictures. This can be accomplished in 2 ways.

Digitising keys

If both the auto xsheet option in the settings menu and the keys option on the digitiser controlpanel are set to on, gaps in the naming sequence will be filled with virtual inbetween cells to keep the timing correct.
If you fill in the names 'a-001' and 'a-005' when the keynames requester pops up after grabbing, the virtual cells 'a-002' to 'a-004' will be created between the real cells on the xsheet.

Auto-creating cells

If the auto function on the auto-requester is used to create a sequence of cells on the xsheet, all cells will be created regardless if the cellnames correspond to pictures in memory or not.
This method can be used to create virtual inbetween cells after the pictures are stored in memory or even to create an 'all virtual cells' xsheet.

Filling in the gaps

Any new pictures are checked against virtual cells in the xsheet and linked to the picture when a match is found. This makes it possible to create an xsheet and create the pictures afterwards or to add missing inbetweens to a keydrawings-only scene.

Note: Loading parts of a scene

If you try to load the scene that is already displayed as the current scene on the titlebar, you will be asked if you want to load any missing pictures. This makes it possible to load an xsheet from disk, edit it and then load the scene to get the pictures. This is useful when you only want so load a part from a very long scene.

Handling Multiple levels

Verifying a multilevel animation

Previewing multiple levels

When more than 1 level is played by the flipper, only 1 color per level can be displayed. This is because it is impossible to merge pictures in realtime and pre-merging the whole scene before flipping would cause delays after each change on the xsheet and need a lot of extra memory.
However, it is possible to show a 1 color per level preview without a major speed penalty. This preview is good enough to check if all levels are aligned properly, but insufficient to check the quality of the animation.

Checking individual levels

The flipper will only switch to 'preview' mode when more than 1 level must be displayed. If the selection of cells to flip is restricted to 1 level, the flipper will display the animation in full resolution.

Flipping a range of cells

If a range of cells is marked on the xsheet, only these cells will be displayed by the flipper. Restricting the range to 1 level will cause the flipper to display the pictures in full resolution.

Disabling levels to flip

Cells that are in levels that are turned off (with the levelheader on/off switch) are not displayed by the flipper. Disabling all levels containing cells, except 1, will cause the flipper to display the pictures normally.

Merging multiple levels

The merging process

The merging process will compose each frame in the same way that the flipper does, but will create and store a full resolution picture to memory instead of showing a preview of each frame. These new pictures replace the multilevel frames on 1 level, allowing to view the complete animation in full resolution after the merging process has finished.
Because the scene is reduced to 1 level, the other levels become available to add more levels to the animation. If you are familiar with multitrack recording, the merging technique resembles bouncing several tracks to a single free track, allowing to reuse the original tracks again.

Opening the MergeLevels requester

The merging process is controlled through the merge levels requester. This controlpanel is opened by choosing the [merge levels...] item in the project menu on the xsheet.
The merge levels requester will not open when less than 2 levels are selected (enabled and/or contain ranges).

Providing the initial merged picture name

Since new pictures will be created, they must have a proper name, so that they can be identified and stored to disk. You should type in an initial name for these new pictures in the mergename field before the merging process is started.
If no name is given, 'mergepic-001' will be be used as the initial name. Since this doesn't say much about the animation it should be avoided.

Setting the transparent color

There are only 2 colors that can be used as the transparent color. Due to the fast merging algorytm, the choice is restricted to either the first or the last color in a picture's palette. As palettes are sorted from dark to bright (when created by Take_2), the transparent color often be black or white.
As Take_2 is a penciltest system, in most cases the white of the paper should be made transparent to simulate cellophanes, so the white option should be set. In other cases it is best to try both the black and white options and use the preview button to determine which is the best choice.

NOTE: Importing pictures

When preparing your animation in another package, care should be taken that either the first or the last color are used wherever you want the picture to be transparent as some software doesn't sort the palette.

Deciding the fate of the original pictures

Since the new merged pictures contain all pictures that where used in the multilevel scene, there is no need to hold them in memory, provided you don't want to use them again as separate pictures. It is not possible to 'unmerge' pictures to obtain the originals they where composed from. You can always save the original pictures to disk before merging the scene, though.
If you decide that you no longer need the original pictures after the operation select the [remove] option. Pictures that aren't needed any more while merging will then be removed, thus freeing up valuable memory. Otherwise set the [keep] option to hold all pictures in memory.

Note: Merging in a low memory situation.

Sometimes, when memory is low, setting the remove option will be the only way to successfully merge the levels. The new (merged) pictures must be stored in memory and the merging will fail when memory is exhausted.

Let the merging begin

Once an initial name is given and the transparent color and original pictures options are set, the multilevel scene can merged (combined) into a single level. If you click on the [merge] button, the merge levels requester will be closed and the merging will begin.

If a selection of cells is made on the xsheet, like ranged cells or disabled levels, you will be asked if you want to merge the selected levels/blocks only or merge the whole scene. Click on the [selected] or [all] button, as appropriate, to continue the merging.

If the original pictures was set to remove, you will be asked to confirm the merging, since the original pictures in memory will be lost. Clicking on the [cancel] button will abort the merging. Remember that you can save the multilevel scene or the individual pictures to disk prior to merging the scene.

The xsheet is updated while the merging is in progress, so that you can monitor the process. When all frames are merged the xsheet will be returned to its original position.

Some notes about the merging process

Merging order

The levels are merged right to left for each frame. Thus level 1 contains the bottom picture (background) and level 4 contains the top picture (overlay). The transparent pixels in first picture (right level) are replaced by corresponding pixels of the picture on the left of it. The transparent color of the leftmost level will be displayed unchanged.

The palette of the merged picture

The palette of the leftmost picture is used for the composed picture. You should take care that all pictures on a frame use the same palette, otherwise you'll get some strange looking results.
For this reason the optimal palette option in the digioptions menu should be off when digitising color pictures for a

multilevel animation. If the images intended to be merged are created in another package, the palette should be locked (if such an option is available).

Padding levels

You can use blanks (available on the picturepanel) to pad levels. They will be rendered as transparent pictures on that level. It doesn't matter if white or black blanks are used.
If all levels on a frame contain a blank, a blank cell of the same type (white or black) will appear in the merged scene at that frame.

Improving image quality

Try to have a good contrast and make the most important lines as dark as possible while digitising a multilevel scene. This will give better results for the flipper multilevel preview as well as for the actual merging of the levels.

TIP: digitise the background in lighter greys

It is common practice to digitise the scene's background brighter and with lower contrast than the actual animation pictures. When merged, the backgrounds appear to be under the animation, as if they where recorded with a light-box, so that they don't obscure the animation but still provide a feel of the environment..

An alternative for multiple levels.

Superimposing an existing picture

If you only want to superimpose a linear background or layout on every grabbed drawing, the digitiser dub mode is a more

convenient solution, since it saves memory and levels. This method can be compared with photographic double-exposing, since a new image is actually superimposed onto an existing one.

Adding a background picture

You should first digitise the background picture. It is important to use a good contrast in order to have a clean mixture of pictures. Select the [dub] button and choose the background picture from the presented picturelist (If there is more than 1 picture in memory). Whenever you grab a new picture, the background will be stored as well. The resulting picture can't be separated into individual pictures again and has a new picturename.

Synchronising with sound

Working with samples

Much like pictures, samples are the digital data in memory or on disk that represent a recorded sound. The 'digitiser' hardware used to convert a sound source into a binary format is called an (audio) sampler.

The sound facilities of Take_2 are intended for checking the synchronisation of the linetested animation with prerecorded (and analysed) speech or music.
There are 4 independent tracks and a (software) 'chase synchroniser' provides playback accuracy.

The samplepanel

The samplepanel shows a list of all samples currently in memory. It is used to select, hear and delete the current sample and gives access to the samplepanel menu for loading samples. The current track, create sound and remove sound buttons are used to manage the sounds that are created from the samples.

Importing samples

Take_2 has no build-in facilities to record sounds directly into memory. The software that came with the sound digitiser (sampler) hardware should be used to record samples and save them to disk as iff-8svx files. These samples can them be loaded into the Take_2 memory using the load>8svx item from the samplepanel menu.

Note: The sound source accuracy

It is important that the sample is accurate in respect of the original timing. The soundsource should use some kind of speed correction, such as bi-phase (filmsound), smpte timecode (video), pilot pulse (nagra) or synctrack (dat), when sampling the sounds.

The length in frames

As samples are recorded at a sample rate per second, there is no information about its length in frames. Obviously this depends on how many frames there are in a second and this again depends on the medium the animation is intended for.

Take_2 uses the value of the 'basespeed' setting to calculate the frame length of a sample. Use the set basespeed option in the settings menu to set the speed of the simulated medium to make sure the sounds are always played in perfect sync, whatever the flipspeed setting is.

Maximum sample size

Although it is possible to use samples that are longer than the 130kb restriction imposed by the custom sound chip, the amount of chip-ram available will still be the physical size limit for samples. Because feeding the sound custom chips with sound dat continuously, as soundeditor programs do, would slow the animation down, the samples still have to reside in chip-ram.

The samples directory

Only the original name and path of samples are stored in the track file when a scene is saved to disk, mainly to save valuable diskspace. It makes no sense to store the same data multiple times on your harddisk. When scenes are exchanged between different Amigas (using Quarterback or other exchange/backup tools) the program often can't find the samples.

If you have encountered this problem you should assign the 'smp:' device to the directory where you keep your samples. Take_2 will search this smp: device if a sample can't be

found. You may create subdirectories in the sample directory for different kinds of sound. The program will search directories within the smp: directory.

The smp: assign is normally made when the programme is installed, but if for some reason it isn't or it's pointing to the wrong directory you should consult your Amiga manuals about assigning logical devices and editing the start-up-sequence.

Working with sounds

When a sound is created from a sample on the xsheet, you can define what part of the sample should be played and change the pitch and volume as well. These alterations don't change the actual sample in memory, but only define how it should be played by the flipper.

Creating a sound

The sounds used in the tracks on the xsheet refer to samples like cells refer to pictures. They define when and how a sample should be played by the flipper.

Unlike with cells, sounds can only be created in one way. Click on 1 of the 4 [track selection] buttons to set the track where the new sound must be inserted. Select the sample in the samplelist on the samplepanel that you want to create a sound from. Click on the [create sound] button and click on the frame in the track-column on the xsheet where you want the sound to start.

The new sound is now displayed on the xsheet. The first frame of the sound shows the name of the sample it is referring to, while the subsequent frames show the modulation

of the sound. At the leftside the frame position in the original sample is displayed for each frame of the sound.

Color coding of sounds

The colors of the sounds on the xsheet should be interpreted as follows:

The frame position

The current sound has white framecount number, otherwise the framecount is blue. You can alter the parameters of the current sound with the soundpanel.
Double-click on a sound to make it the current sound.

The data display (name or graphic)

Selected sounds are red, otherwise the sound is blue. You can remove selected sounds with the remove sound button on the samplepanel.
Clicking on a sound toggles its selection state.

Removing sounds

Unwanted sounds can be removed from the xsheet. Removing a sound leaves the sample it refers to untouched, it only removes the instruction to play a sample at a certain frame in a certain way. For this reason, and for efficiency, no confirmation is needed as the sample isn't lost.

Select the sounds you want to remove by clicking on them, making their graphic display on the xsheet red.
Click on the [remove sounds] button on the samplepanel to remove the selected sounds from the xsheet.

The current sound

All editing of sounds is done on the parameters (offset, length, pitch and volume) of the current sound. Each newly created sound is automatically set to be the current sound (marked with white framenumbers). Any sound on the xsheet can be made the current sound by double-clicking on it.

The soundpanel

The soundpanel shows the parameters of the current sound and allows to alter these settings. It also shows the frame and track where the current sound is located on the xsheet. Clicking on this sound position resets the current sound to its default settings.

Trimming unwanted parts

The sound start

Often only part of a recorded sample is needed for checking a particular scene. If you have a transcript of the sample's breakdown, you can determine at witch frame the sound should start, then change the [offset] value on the soundpanel accordingly.

The sound end

You can additionally set for how many frames the sound should be played by setting the [length] parameter on the soundpanel to the appropriate value.

Changing the length of a sound

Altering the total length

The length of a sound is determined by both the pitch and the length values of a sound. Changing the pitch to a higher value will make the playing time of a sample longer and lower pitched, while a lower value makes it play shorter and higher pitched, much like changing the playback speed on a conventional tape-recorder.

Truncating the sound

The length parameter is used to truncate the sound so that it stops playing after a preset number of frames. This parameter works on the framecount of the sound rather than the original sample, so that the pitch setting is taken into account.

Note: Time stretching

The pitch setting can not be used for 'time stretching' (changing the playing time without changing the pitch). The sample should be pre-stretched using dedicated software for this purpose.

Changing the volume of a sound

When using multiple soundtracks, a balance should be made between sounds played simultaneously.
Each sound has its own volume, relative to the maximum value of 64. Changing the [volume] value on the soundpanel to 32, for example, will make the sound half as loud. The volume can't be changed within an individual sound, though.

Moving sounds on the xsheet

Clicking on a sound-header (name) then dragging the mouse will change the start position of the sound to a new frame if possible. Although you can drag a sound beyond another one, it can't replace an existing sound.

Storing and retrieving your work

Important directories

The 'home' directory

It is now possible to set the initial directory-path to be shown when the file-requester is first used after a the configuration is reset. If you choose set home path... from the settings menu, a requester will come up where you can type your 'homebase'-directory. If the home path isn't set, the directory display will not be changed after a configuration reset.

The smp: directory

Since Take_2 doesn't save the samples but only the path they where loaded from, moving the samples to another location on disk will cause the programme to loose track of them.
The logical device assignment 'smp:' will solve this problem. If a sample isn't where it's supposed to be , the programme will search the smp: device for the missing file. If you make sure

the samples always reside under the smp: directory tree, the samples will be found.
The smp: device is set when the software is installed, but you can change the assignment manually by editing the 'user-startup' script. Refer to the Amiga manuals for more information on this topic.

The scene directories

When a scene is saved, it isn't stored as a single file containing all data but as separate files in a directory. Most of these files can be used by other software, so it is useful to know some details about them.

The scene

The scene itself isn't a file but a directory, used much as a wrapper around the actual files that make up the scene. You can perform any file operation that can be used with directories, such as copying, renaming, moving or deleting. This will affect the files in the directory as well !

The pictures

The pictures are stored separately as iff-ilbm files. This graphics file format can be read by all Amiga graphics packages. When re-saving the images after touch-up with such a package, care should be taken that all pictures are in the same resolution and the file names are identical. You can make a copy of the scene before changing the images so that you have a backup when things go wrong.

The xsheet

The xsheet file can be recognised by the .xsht extension

The xsheet is stored as a standard ascii text file, which can be edited with any text editor. If a word processor is used, the xsheet should be saved as an ascii text file, since word processor files contain much more data (for formatting) than just the plain text.
for the pictures to display The xsheet is stored as a line of text per frame containing the names on each level, separated with tab characters.

The soundtracks

The track file can be recognised by the .trck extension.
The tracks are stored as a standard ascii file, which can be edited with a texteditor. Again, when a word processor is used the tracks must be saved as ascii text files rather than formatted word processor files.
The tracks are stored per sample. Each sample is identified by a 'smp' keyword followed by its location on disk (the path). If this sample is used by a sound on the xsheet, a line of sound parameters follow. This is marked with the 'snd' keyword and contains the values of respectively the start-frame, track, length, volume, repeatcount and offset, all separated with spaces.

The configuration

The config file can be recognised by the .conf extension.
The configuration is currently saved as a propriety file. Only Take_2 can read and interpret its contents. No details can be given since the internal format is subject to change.

Loading Scenes from disk

Loading a scene

To load a previously saved scene, choose [load>scene] from the project menu, then traverse the disk containing your scene until it is displayed in the directory display. Select the (blue) scenename and click on the [load] button to load the scene into memory. You can monitor the loading in progress on the directory display.

Loading multiple scenes

It is possible to select more than 1 scene. If all pictures in the scenes have the same resolution, all selected scenes will be loaded subsequently, otherwise a message will inform you about the resolution incompatibility after the first scene has loaded.

Note: auto-padding of levels

It is possible to load scenes with a different number of levels. Empty levels of the first loaded scenes are padded with blanks when a new scene, using more levels, is appended.

The current scene name

Whenever a name is defined for a scene (directory) by either loading or saving it to disk, this name is shown in the titlebar on the xsheet. This makes it easier to identify the animation you are working with.

Loading parts of a scene

If you try to load a scene with the same name as the current scene, as displayed on the xsheet titlebar, you will be asked if you want to load the missing pictures. This is because it makes no sense loading the same scene twice, except when there are differences in the xsheet.
This feature can be used to load parts of very long scenes. First load the xsheet separately, using the [load>xsheet] item in the project menu, edit it until only the part you are interested in remains, then use [load>scene] in the project menu to load the pictures.

Saving Scenes to disk

Saving the scene

Choose [save>scene] from the project menu, go to the directory where you want the scene to be saved and click on the [save] button. If no name is entered in the file-name field (under the path field) on the file-requester, a name-requester will appear and query to enter a name for the scene, otherwise the saving will take place immediately, using the provided name. Entering a [carriage return] in this namefield has the same effect as clicking on the save button (or proceed on the name-requester). You can monitor the saving in progress on the directory display.
NOTE: Overwriting existing scenes

If you save a scene with the same name as a previously saved scene, an warning-requester will pop up. If proceed is chosen, the scene-directory and its contents will be deleted and the saving will continue as before.

Saving parts of a scene

If some levels are disabled or ranges of cells are selected on the xsheet when you save a scene, you will be asked if you want to save the complete scene or only the selected parts. This can be useful if some levels or cells serve only as a guide or when dividing long animations into multiple shorter scenes.

Removing obsolete scenes

Directories containing files can be deleted with the [del!] button. Directories within directories will not be deleted, however, since this would provoke potential disasters, especially in schools and companies...

How many pictures will fit on a disk ?

The diskinfo-panel, which pops up when the info button on the file-requester is selected, will display how many pictures will (at least) fit on the current (hard)disk. This gives an idea how many pictures with the current resolution will fit on the disk with no compression. This means you can probably save more pictures on it, depending on the nature of the images (clean images, dark lines on a white background, will be better compressed than smuttered images).

Other ways to save an animation

As an existing scene

If a you test a new version of an earlier saved scene, it is best to remove the old scene on disk to free the diskspace and avoid confusion when trying to load the most recent version of the animation.

Choose [save>scene] from the project menu and select the old scene in the directory-display. When you click on the [save] button, the naming requester will pop up with the name of the selected scene already in the namefield. When you click on [proceed] you will be asked to verify that the old scene on disk may be deleted. If you click on [proceed], the old scene will be deleted and the new scene will be saved with the same name.

As changes to the xsheet

There's no need to re-save a scene completely if only the xsheet has been changed, but no pictures where added since the scene was last loaded from disk. Since the saving of pictures is by far the most time-consuming process when saving scenes, it will be much faster to only save the xsheet instead.
Choose [save>xsheet] in the project menu and open the scene directory. Click on the xsheet (the file with the .xsht extension) and then on the [save] button. When you click on [proceed] you will be asked to verify that the old xsheet file on disk may be deleted. If you click on [proceed], the old xsheet will be replaced with the current version.

As an iff-anim file

If you need to load the animation, including the timing information, into another animation package the scene should be saved as an iff-anim file, since only Take_2 can read and write 'scenes'.

Open the picturepanel and choose [save>anim] from the picturepanel menu. Click on the [save] button and type in a name for the animation in the name field on the name-

requester. When you click on [proceed] the animation is saved on disk. You can monitor the saving in progress on the xsheet.

NOTE: Anims and sound

There is no provision to embed sounds in an anim file. If you want to save your animation with sound, you should save it as a scene as well, or save the tracks separately so that you can recreate the soundtracks later.